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The topological multiplicities of power: the limits of governing the Olympics

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The topological multiplicities of power: the limits of governing the Olympics

Abstract

This paper proposes that economic geography would benefit from a closer consideration of the topological multiplicities of power, that is, the multiple contending configurations of networks that make power a precarious accomplishment through creating constant overflows. It develops this argument through tracing how knowledge circulation in the preparation for the Olympic Games establishes socio-material networks that are meant to allow the IOC to coordinate the organization of the event. Working with Bruno Latour's concept of the oligopticon, the paper develops a socio-material notion of power to govern at a distance that emerges through the triple movement of I) collecting and mobilizing information, II) casting it into stable intermediaries and III) recirculating knowledge. At the same time, a parallel narrative considers how this power and its spatial reach remain always partial and are transformed by overflows as elements move in and out of networks and forces outside the network bear on it, creating 'absent presences'. Giving adequate attention to these topological multiplicities of socio-material networks offers an important counterweight to the notion of stable, social networks dominating in economic geography and is particularly useful when analyzing the governance of projects and various other forms of ephemeral, distributed organizing.

Keywords: power, actor-network theory, multiplicities, Olympic Games, circulation, knowledge

Introduction

Over the past decade, economic geography has experienced a sustained resurgence of a concern with power – the ability to affect action (e.g. Allen 2003; Faulconbridge 2012; Faulconbridge and Hall 2009; Lee 2000). Understanding power and its particular spatialities is central in a world where the production of economic value is increasingly dispersed across sites and gaps between here and there need to be bridged to coordinate action. In economic geography, two distinct readings of power have emerged. One is that of power as a centered, resource-based attribute. Power in this sense is a capacity that some actors possess over others *qua* resources such as money, people or knowledge (e.g. Peet 2007). The other reading sees power as having a networked form and being an emergent property of the associations that make up these networks. This relational notion of power has been bolstered by the turn towards a relational economic geography and underscores that power is distributed and needs to be actualized in practices (Allen 2003; Yeung 2005).

This paper develops an affirmative critique of relational accounts of power that works towards incorporating the topological multiplicities of power. A topological view of power sees it as arising from heterogeneous, socio-material relations that enable ‘distant actors to make their presence felt ... by dissolving, not traversing the gap between “here and there”’ (Allen 2011, 290), thus not so much being located in space as composing it in the first place (cf. Amin and Cohendet 2004). Social topology thus focuses on how proximities and distances are a function of the more or less intensive relations between humans and non-humans. Recognizing the

multiplicities of topologies means recognizing that there is not one coordinated set of relations from which power emerges to create a single reality, but that there are multiple potential configurations of networks, composed of an assemblage of humans and things, that might overlap, overturn, contradict or flow into each other. Connections break and are transformed, elements slip out of networks and are enrolled in others – what Callon (1998) calls overflows. This idea of multiplicities is drawn from Deleuze (1988 [1966]; 1987, 33), who takes it to mean that entities do not reference a prior unity or structuring principle, but are porous and in constant transformation, attaining stability only for limited durations. This paper works through the topological multiplicities of power mobilizing Latour's (2005, 181) concept of the oligopticon: a precarious center of power that attempts to enroll others in network associations and govern at a distance.

On the empirical plane, the paper presents a case that can be considered as emblematic for illustrating the topological multiplicities of power. It draws on the Olympic Games as an example of a large-scale project (cf. Grabher 2002) to examine how the International Olympic Committee (IOC) – as oligopticon – attempts to govern at a distance through forging connections and enrolling a multitude of elements from different locations to stage the most complex mega-event on earth. In this process of emergence, network arrangements are often precarious, since relations are forged anew for each edition of the Games. Networks frequently change shape and elements wander from one network to another. Through tracing how relations are established, but also, crucially, where they are transformed, liquefied and how they reflect what is not in the network, the paper

explores the topological multiplicities of power and how they make the IOC's capacity to govern often rather selective.

The focus on the topological multiplicities of power in large-scale projects further develops two major strands of economic geographical research. One is that on *networks*, knowledge networks in particular, where a stress has been on a functionalist reading of networks as rather stable, cohesive entities, marked by strong ties between social actors that enable economic action (cf. Grabher 2006, 181; Grabher and Ibert 2006). Networks are made up of ties that bind, whether it is transnational professional service firms (e.g. Faulconbridge 2007; Jones 2007) or firms in innovative regions (e.g. Krätke 2010). But this concern with the stability of networks has all but skirted around multiplicities. Yet, 'is not a net made up, first and foremost, of empty spaces?', Latour (2005, 242) asks. Is power not constituted just as much through what remains outside a particular network – through the relations that break, transform or never are in the first place – as through the relations that hold? With the concept of multiplicities the paper offers a handle on those elements that are beyond and between relations and present alternative network configurations, which may or may not become actualized. It thus works towards a more ephemeral and fluid conceptualization of networks – a fluidity, it should be added, which often also allows them to adapt more easily to unforeseen circumstances and new situations by changing shape.

The second contribution is more empirical and relates to the work on *projects* and forms of *temporary, distributed organizing*. In what is sometimes called the 'projectification' of work (Midler 1995), we are witnessing the spread of an emergent form of organizing through the ongoing shift from permanent

organizations to more transient, task-oriented projects that often assemble teams on an ad-hoc basis and across different sites (Asheim 2002; Ekstedt et al. 1999; Grabher 2002; Lam 2000). This projectification is becoming more and more common outside the sectors that are typically associated with it, such as consulting, design, marketing, software, engineering, aid and disaster relief and so on. Mintzberg (1980, 336-38) termed these organizations ‘operating adhocracies’ – fast-moving and task-oriented with fluid structures and manifold interfaces with their outsides. Temporary organizations typically assemble elements from different places to become operational: in this sense we can speak of a distributed form of organizing. For analyzing how projects and adhocracies operate and are governed at a distance the concept of topological multiplicities is well placed to do justice to the changeable goals, varying network compositions and time-spatial arrangements of these organizational forms.

In its methodological approach, the paper responds to the demand to attend more to the actual workings of power and how it is exercised at the level of individuals. It thus reacts to the justified critique that in economic geography ‘too often, ... the sociospatial processes involved in constructing power relations are studied obliquely, superficially and in ways that have limited explanatory capability’ (Faulconbridge 2012, 736; see also Allen 2011; Sunley 2008, 17). The paper traces the processes of network formation in connection with a recent move of the IOC to play a stronger coordinating role in the Olympic Games through facilitating a system of knowledge transfer. It draws on participant observation as well as 47 semi-structured interviews with staff from the IOC administration, the Organizing Committees of the Olympic Games (OCOGs) in Vancouver (2010), London

(2012), Sochi (2014) and Rio de Janeiro (2016) and consulting experts.¹ This research has created unique material that is able to examine the emergent topological multiplicities of power in the organization of the Olympic Games across sites from the insides of the key players involved in them. Heeding the ANT principle of tracing associations – ‘reassembling the collective’ (Latour 2005, 248) – this paper follows the traveling of knowledge in the Olympic Games and, woven into the empirical narrative, considers the theoretical implications for how we understand power.

Amassing resource power but remaining blind: the IOC from 1980 to 2000

In economic geographical terms, the IOC is a most interesting organization. Its primary mission, according to article 2 of the Olympic Charter, is to ensure the regular celebration of the Olympic Games. For this purpose, it elects host cities and monitors the Organizing Committees of the Olympic Games (OCOGs) that are set up by host cities to organize the Olympic Games and represent separate legal entities under the respective national laws. In more practical terms, ensuring the regular celebration of the Olympic Games means coordinating and bringing together hundreds of thousands of people and objects dispersed across the globe. To give an idea of the immense size of this task, the 2012 Summer Olympic Games in London involved more than 10,000 athletes, a workforce of more than 200,000 people, 10.8 million ticketholders and an official budget of somewhere around GBP 9 billion (London Organising Committee 2012). The Olympic Games are sometimes called the largest peace-time project and likened to ‘the equivalent of

organizing twenty-six international sports events, ten royal weddings, three European Capital of Culture programmes, two World Expos and one World-Cup Final all at the same time and over a sixteen-day period' (Miah and García 2012, 103). At the same time as the London Games were taking place, preparations for the Winter Olympic Games in Sochi, Russia, and Pyeongchang, Korea, and the Summer Olympic Games in Rio de Janeiro, Brazil, also were in full swing. In each of those locations, the Olympic network needs to spread out to enroll a diversity of elements: architects from Germany, consultants from Australia, construction workers from Turkey, metal detectors assembled in China, snow cannons made in Austria, footballs from Bangladesh, laptops from Taiwan and so on.

How does the IOC achieve this feat of coordination? The answer is that, for a long time, it did not achieve it at all or even tried to. Until well into the 1980s the IOC had little financial or human resources to support the Olympic Games. The IOC administration in Lausanne comprised two or three salaried staff up until the 1960s, which grew to about 20 in the 1970s (Chappelet and Kübler-Mabbott 2008, 27).

After the election of the host, cities and countries were left to their own devices to organize and fund the Games and create potential revenue from them: 'the IOC generally announced the winner of the Games and then left it to the organizing committee established by the host city to deliver the Games' (Pound 2004, 11).

This situation changed when Juan Antonio Samaranch took over the presidency of the IOC in 1980. He made substantial efforts to allow the IOC the appropriation of resources and value from the Olympic Games. To this end, he launched a global sponsorship program and transferred the negotiation of broadcasting rights, by then

the largest source of revenue, from individual OCOGs to the IOC. These moves created control over large parts of the revenue from the Olympic Games.

In the 1980 and 1990s the IOC thus amassed resource power. The notion of resource power assumes that power is a capacity of particular actors – firms, states, cities and so on – on the basis of control over resources (Allen 2003, 15-37). This is a largely instrumental view of power in which others are expected to comply with the rules set out by the central power (Sharp et al. 2000, 3-7). The source of power is the command over capital, rules, military forces or other resources that are at the disposal of particular actors in privileged centers. This understanding of power is evident in Peet's (2007, 1) *Geography of Power*:

Power means control, by a person or an institution, over the minds, livelihoods and beliefs of others. Power accumulates into systems. With the term "geography of power" I refer to the concentration of power in a few spaces that control a world of distant others.

The growing resource power base of the IOC, as evidenced in its control over resources and rules of the Olympic Games, did not, however, allow exerting significant control over the organization of the Games themselves. Although the IOC sets out certain requirements in a 50-page host city contractⁱⁱ, how to achieve those requirements has long been left up to the individual OCOGs. Due to the generic clauses in the contract, OCOGs had considerable leeway in the choice of process. As one member of the IOC administration put it: 'People just followed their gut feeling.' This statement resonates with Allen's observation that resource power may be squandered, misused or applied to little effect: 'the spread of

certainties from the “center” outward tends to be assumed and not evidenced’, he writes (Allen 2003, 157).

In fact, the low degree of connections between the IOC and the organizing committees, together with the increasing complexity of the Olympic Games, sometimes led to a severe waste of money or inadequate levels of service to client groups during the Olympic Games. Mistakes and detours with huge cost implications were repeated in several host cities, sometimes resulting in the near failure to deliver the Games: ‘Behind the scenes, the whole operation is often held together with the proverbial chewing gum and baling wire’ (Pound 2004, 206). In the run-up to the Olympic Games in Atlanta in 1996, grave complications arose with inadequate and delayed planning for critical areas as well as excessive commercialization and the IOC felt that things were getting out of hand, as the OCOG had underestimated the complexity of the planning involved.

Becoming an oligopticon: the IOC from the 2000s

Despite its extensive resource base, then, the IOC was unable to project power across space and ensure a smooth and adequate preparation process on the ground – a predicament that jeopardized the fulfillment of its mandate to guarantee the regular celebration of the Olympic Games. The IOC realized that for controlling the organization of the Olympic Games it needed reliable delegates for its power to be mediated across space. This was to be achieved with the introduction of a knowledge management and transfer system, which sought to ‘re-establish ownership of the Games’ and make all actors ‘sing from the same hymn sheet’ (interview with IOC administration staff). The basic idea was to circulate

knowledge on how to organize the Olympic Games between the different OCOGs, not only providing guidelines, lessons learnt and best practices of predecessors for current OCOGs to emulate, but also preformatting when in the process of organizing an Olympic Games an OCOG had to do what and how it could be done. This mobilization of knowledge was designed to fashion the IOC with the ability to affect what was happening on the ground in far-away places. ‘For control’, Callon and Law (2004, 4) write, ‘something has to move’.

Phrased in more conceptual terms, the IOC aimed to build relations, connect sites and set out to become what Latour (2005, 181) calls an oligopticon. Latour develops this notion from his earlier one of the center of calculation (Latour 1987, 215-57). It is similar to a center of calculation in that it produces knowledge claims through a triple movement of first bringing home distant worlds (localizing the global), then combining elements and finally recirculating the product of combination (globalizing the local). However, an oligopticon is also different from a center of calculation in two important respects. First, the concept also covers centers where metaphorical calculations are performed and not just literal ones, as in the centers of calculation. Metaphorical calculations can best be understood as the combination and processing of practices, texts, techniques, people and materials that are then put into a black box to create new knowledge claims. Through recirculating these knowledge claims with the help of mobile delegates, an oligopticon establishes network associations with other elements.

In contrast to most economic geographical accounts of networks, in particular knowledge networks, it should be stressed that the power of an oligopticon rests on the assumption of associations being composed of humans and things – what

Deleuze and Guattari (1987, 88) call an assemblage. For economic geographers, networks have typically been made up of social relations and described as ‘inter-personal’ (Grabher and Ibert 2006) or as a ‘specific set of linkages among a defined set of persons’ (Glückler 2007, 621 citing Mitchell 1969: 2). Temporary organizations in particular have been characterized as relying on individual-embedded knowledge (Ekstedt et al. 1999, ch. 6) No doubt this anthropocentric focus is indebted to Granovetter’s influential formulation that ‘economic activity is mediated by ... networks of *social* relations’ (1990, 96 emphasis added), that is, relations between humans. In general then, as Amin and Cohendet (2004, 71) point out, ‘the anthropomorphic dimensions of knowing and learning continue to be overemphasized’.

The material component of associations, however, is crucial for two reasons if we talk about power as an effect of distributed associations. First, materials are often able to circulate with less effort than humans and thus are better able to establish associations (Murdoch 1998). Despite the spread of business travel (Faulconbridge et al. 2009), an electronic document moves both more quickly and is more easily replicated and distributed to become ubiquitous than a person. Second, materials are also more stable and hold their form better than humans (French 2000; Latour 1987). Whatever is inscribed in materials thus tends to have a certain measure of durability – a durability that both makes it more permanent, but often also more resistant to change and adaptation.

In contrast to his earlier concept of the center of calculation, and this is the second important difference, Latour explicitly signals the limits of power with the choice of the term ‘oligopticon’. An oligopticon – as the name implies – sees and orders

some things, but not others: an oligopticon has ‘sturdy but extremely narrow views of the (connected) whole ... as long as connections hold’ (Latour 2005, 181). There is thus much that escapes the gaze of an oligopticon. If we were to follow only the network associations, we would not see the ‘necessary Otherness that comes with the project of centering’ (Law 2002, 137). The point here is not just that power is limited, which would be a moot one. The point is that these limits are constitutive of economic action: each attempt at ordering a network and creating an inside is necessarily set against a disordered outside that shapes this process. Callon (1998, 252, 55) sets this out most clearly in his dynamic of framing and overflowing that creates multiplicities, when he writes that: ‘a framing process ... is always incomplete and ... without this incompleteness [it] would in fact be wholly ineffectual. ... A totally successful frame would condemn the contract to the sterile reiteration of existing knowledge.’ What Callon calls ‘overflows’, Mol and Law refer to as ‘fluids’ (Law and Mol 2001; Mol and Law 1994), and Latour (2005, 244) has a similar notion of multiplicity with his concept of ‘plasma’ (cf. also Allen 2011).

The oligopticon and its attendant notion of multiplicities present an important counterpoint to scholarship in economic geography that has so far privileged networks as stable, coherent entities. As Grabher and Ibert (2006, 252) have observed, economic geography ‘uses networks as shorthand for enduring, robust, and trust-based ties ... and cohesive and stable social underpinnings’. The alignment of interests of different actors through a process of network stabilization figures in several studies in economic geography: networks are linked to the establishment of trust, the spread of best practices, standards and knowledge, the

organization of global production and so on (e.g. Barnes 2002; Coe et al. 2008; Leyshon and Pollard 2000; Reiffenstein 2006). Network relations might be local or regional, creating institutional thickness that supports a shared sense of purpose, knowledge exchange and synergies of interaction between organizations (e.g. Krätke 2010; Maskell and Malmberg 1999; Morgan 1997). Or they might span significant physical distances, as in the case of communities of practice or the knowledge networks that tie together distant offices in the professional service industries (Faulconbridge 2007; Hall 2007; Jones 2007). In either case, the emphasis falls on the enabling effects of comparatively stable networks. Critics have pointed out, however, that ‘economic geographies are produced not just by connections and networks, but also by innumerable economic fractures and fissures and the absence of connections’ (Sunley 2008, 19; see also Vorley et al. 2012). This is precisely what the notion of the oligopticon allows us to become attuned to: stability is but one side of networks. Networks may be stable in some instances, but shift shape and transform in others.

In particular, the concept of the oligopticon allows addressing the concern that ANT-inspired approaches have been unable or unwilling to think about the whereabouts of power and about power differentials (Dicken et al. 2001; Ettlinger 2003; Grabher 2006; Jones 2008). As a center that sees and is able to coordinate some things well, as long as connections hold, it specifies how powerful actors emerge through circulation and combination processes. At the same time, however, the concept also emphasizes that power is a precarious effect. It thus offers one possible reading of more nuanced notions of power and its limits in organizational settings that have been called for in economic geography (Faulconbridge 2012;

Faulconbridge and Hall 2009; Yeung 2005), rather than viewing it as an all-encompassing force.

The task for the ensuing analysis is thus twofold. One is describing the attempts of the IOC to create a mediated power at a distance and establish socio-material associations through the triple movement of bringing the world to the center (I), combining and processing (II) and then recirculating (III). The second is to highlight the topological multiplicities of power and examine how they interact with and intervene in the process of network-building. Since these two processes are not sequential but parallel, this is reflected in the structure of the following sections, where the description of establishing associations, i.e. of the network, is intertwined with the overflows of the network that spawn topological multiplicities.

I) Bringing the world to the center: bringing Sydney 2000 to Lausanne

Until the beginning of the 2000s, the IOC had little detailed knowledge about the process of Games planning and organization. As is typical for project-based organizing (Grabher 2004), the knowledge acquired in organizing the Olympic Games quickly disappeared with the dissolution of the OCOGs after the event. In order to avoid the disruptions that were witnessed in Atlanta and keep closer tabs on the progress of Games preparations, the IOC sought to build a knowledge transfer system starting with the Olympic Games in Sydney in 2000:

The Australians were very good at learning from these shortcomings [in Atlanta], they were very good at documenting their processes and ... we were keen on

bringing more support to the organizing committees, we realized the IOC had a role to play (interview with IOC administration staff).

The documentation from Sydney included 38,000 electronic files as well as more than 120,000 records such as paper files, photographs and videos (Halbwirth and Toohey 2001). Conserving and circulating those vehicles had become possible, because the Sydney OCOG had been the first to introduce a large-scale document and knowledge management program. The task of circulating was made considerably easier through the use of websites and mass storage media such as CDs, both of which had become common during the lifetime of the Sydney OCOG. This documentation, however, did not circulate freely to the IOC: it had to be bought for AUD 5 million [about USD 2.5 million at that time]. What is crucial here is the mobilization of information, which allows to forge associations in the first place, and which is contingent on the material form of the information. Material vehicles render information mobile and make it durable at the same time so that they outlast the lifetime of temporary organizations such as the OCOGs (Latour 1987).

II) Combining and processing knowledge: the IOC administration

1) Assembling knowledge claims

Although the IOC had acquired the vehicles that held the relevant information from the Sydney Olympic Games, it could not handle and process this information on its own. While the sheer quantity was an issue, the IOC also lacked people with the necessary skills and operational Olympic Games experience to transform this information into relevant knowledge. The combination processes to become an

oligopticon therefore required the mobilization of people who were able to process and combine this information. In the beginning, this challenge was approached through setting up a separate organization, wholly owned by the IOC, which was to deal with collecting information and processing it into knowledge and was partly staffed with former Sydney OCOG managers that had the necessary experience.

The thousands of texts, photographs, plans, budgets and so on could now be condensed into what was to become the guiding document for future OCOGs: the material object of the IOC Technical Manuals. As of 2012, there were more than 30 of these manuals with several hundred pages each that set out the major milestones for different functional areas in the OCOGs and the best practices to achieve them. In the best sense of Latourian calculative combination, the Technical Manuals combine descriptions of the main factors to be considered in delivering a particular service with photographs, diagrams and tables into one guideline with a coherent, unified format. All manuals are standardized, i.e. they follow the same outline and have the same layout to allow for easy cross-referencing. It is crucial to note that it is an object – rather than humans – that forms the cornerstone of knowledge networks here. This will be of central importance when it comes to the circulation of the Technical Manuals.

<==== begin overflow

What does not become evident from tracing the associations that make up the Technical Manuals, however, are those elements that shaped the network without becoming enrolled in it. This Otherness creates absent presences (Hetherington

2004; Law and Mol 2001): effects on the network without joining the network. One of these absent presences were deep-running controversies about what to include and what to exclude in Technical Manuals. As one consulting expert recalls:

There was one manual where we almost fell out with each other, because I believed there needed to be more specific guidance, more details, and [an IOC senior manager] believed there shouldn't be (interview with consulting expert).

This argument was fuelled by differences in opinion among different factions within the IOC to what extent it should intervene in the preparation of the Olympic Games on the ground. In essence, this was a debate between more hierarchical and more heterarchical network structures (Grabher 2006, 168): more heterarchical relationships meant greater autonomy for OCOGs and less control on the part of the IOC, whereas hierarchical relationships through providing more specific direction meant greater control but came with the risk that the IOC might have to shoulder part of the blame, if things went wrong. After all, the OCOGs then would have claimed that they had merely followed the IOC's advice.

The Technical Manuals thus reflect a – still ongoing – controversy about the level of involvement of the IOC in the hosting of the Games. So, as Law and Mol (2001, 617) write, what is present – the Technical Manual - '*depends upon* that which is absent (so it is present) but ... at the same time depends upon *making* it absent' – because an internal political struggle could not be cited as a rationale for how to compile a Technical Manual.

<==== *end overflow*

The combination process that creates the Technical Manuals is a continuous one, for as new editions of the Olympic Games are staged, the manuals are adapted to incorporate changes and learnings. Technical Manuals thus emerge from an intricate process of evaluation, ranking, analyzing and deliberating in the course of which they enroll diverse elements into the network and hold them together. Information flows are channeled, the processing of information is standardized. As such, Technical Manuals function as simplified, abstracted knowledge claims whose contingency has been rendered invisible through veiling the traces of the abstraction processes that constituted them (Latour 1987).

<==== begin overflow

But what worked well for the information from Sydney 2000 worked much less well for other Olympic Games. In particular, language turned out to be an obstacle for the combination process. Although English is the official working language between the IOC and the OCOGs, OCOGs outside English-speaking countries commonly adopt the local language as the internal working language.

What Beijing ended up doing was: “Yeah, we'll give you all our stuff post Games.”

Then, a year after the Games, they said “Here's our stuff and we have 30,000 documents in Chinese. There you go!” You can't really do anything with that and my understanding is that the IOC tried to and invested quite a lot of time and money probably trying to translate the document names into English to try and establish whether there was any useful content in Chinese in that stuff and kind of probably concluded that there probably wasn't and that it wasn't worth the cost and effort of trying to translate it (interview with consulting expert).

So while the documentation as such might be available and can be mobilized, it is sometimes difficult to order it into a coherent network. Documents in Chinese that served their purpose well for organizing the Beijing Olympic Games are resistant to being integrated into the network-building of the IOC. Some things thus escape the gaze of the oligopticon: a competing network that was able to successfully achieve the coordination of action for the Beijing OCOG now circumscribes the power of the IOC to govern at a distance.

Even where the documentation was delivered in English, however, there remained the challenge of combination. OCOGs dumped huge amounts of documents with the IOC after wrapping up their operations, which often represented the unstructured whole of the contents of file servers and hard drives.

You know, after the Games people can't be bothered to write a freaking report. Over is over. They just take the documentation they can find, slap something together and send it off (interview with consulting expert).

Lacking the experience of people who worked with those documents, the challenge for the IOC was to make this information combinable: to separate important from unimportant information, link pieces of information together, structure them and condense them into relevant knowledge. The process of ordering the network thus often failed, because of a lack of processing abilities and capacities.

<==== *end overflow*

2) Establishing obligatory passage points

Experiencing these difficulties in assembling the network, the IOC realized that the processes of bringing knowledge back home had to become better formatted and rationalized. As a consequence, in 2008 and 2009 it introduced the Building Knowledge Capabilities program in its relationship with the OCOGs. One central objective was to provide for the collection of knowledge over the whole lifecycle of an OCOG, thus attempting to circumvent the dual problem of either not receiving any useful documentation at all or receiving all at once as an unstructured conglomerate at the end of the Olympic Games. A pivotal component of this new program was the Transfer of Knowledge Action List, known as the TOK List. This list contained more than 2,500 items to be collected and submitted via an online tool at specific points in time. It was intended to serve ‘as the single reference point for transfer of knowledge related contributions. It answers the questions of what knowledge needs to be collected and transferred, how and when’ (Technical Manual on Information and Knowledge Management, 2010: 167).

The TOK list thus was turned into an obligatory passage point (Callon 1986) in the relations between the IOC and the OCOG: it forced the elements in the network to converge and speak the same language, mediating between them. Together with the Technical Manuals the TOK list was designed to allow the IOC to reach into the OCOG at a distance, not only bringing information back home but at the same time enrolling elements into the network. For if, according to the TOK list, a certain operating plan, for example, has to be delivered at a preset point in time, this requirement also preformats the planning process in the OCOG. This was also addressed as a key feature of the new Building Knowledge Capabilities approach:

We do not collect knowledge for the sake of it. We more and more are trying to align the processes, trying to align the tools, trying to align the needs (workshop statement from IOC administration staff).

As an obligatory passage point, the TOK list enabled the oligopticon to see better what is happening, but also to order the network and enroll the different OCOGs – whether in London, Sochi or Rio de Janeiro. It thus became a quasi-standard (Latour 2005, 230) that made sites commensurable and attempted to format and sequence them in similar ways.

The introduction of the TOK List allowed structuring the process of bringing home information, but it also fulfilled another important purpose. In stipulating deliverables such as plans, budgets, models, schedules and so on that are specified in the Technical Manual and spreading them out over time, it helped pre-calculate the information that was coming home to the IOC. This shifted much of the onus of combination from the IOC to the OCOGs, with the Technical Manuals acting as ‘faithful emissaries’ (Law and Hetherington 2000, 42) that format the combination process. What information arrives in the center is now so much pre-calculated that the further combination – updating manuals and guides and perhaps writing some new ones – can be achieved by the IOC administration, with the help of some consulting experts with operational experience. In so doing, the IOC as an oligopticon has a crucial advantage: it employs staff that are handling several Games at once, which – now that information is preformatted – enables them to consult inscriptions from parallel or previous Games and draw comparisons, making adjustments to Technical Manuals and other guidelines. The hundreds of thousands of people and objects that need to be coordinated for the Olympic Games

now come together – at least that is the design – in ordered networks with the Olympic Games Department of the IOC in Lausanne as an oligopticon. The ordered relations of the oligopticon allow the IOC to run this department with no more than 20 staff – few resources, but many associations that allow seeing and ordering what is going on in distant places. This is reflected in condensed form in the following statement of an OCOG member of staff:

The IOC is like a huge, huge, huge boss with a huge brain and a huge memory, and a huge experience. They give us the things, they accumulate the knowledge during the different Games, of all Games that have been held. They can transfer it, share, they could tell us about our focus and they can tell what is our progress, where are we now, how do we do this or that (interview with Sochi OCOG staff).

<==== *begin overflow*

Notwithstanding its ambition to act as an obligatory passage point, however, the structured program of bringing knowledge back home still encounters regular difficulties that hamper the collection and ordering of knowledge. For one thing, staff in the OCOGs often cannot be persuaded to put effort into sharing knowledge when they are busy with operational planning, since there is no immediate benefit for the tasks they are facing:

I don't want to be bothered during the Games, worrying about knowledge transfer. I want to be able to run the Games and it's hard for me to spend time even during the planning to sit down and think about what knowledge I want to transfer (interview with consulting expert).

Because complying with the TOK list is mandatory, there is no way around its requirements, but its preformatted nature frequently engenders a rote check box mentality: staff might be willing to pass on existing documents, since this requires little effort, but in particular those deliverables that ask for active reflection on lessons learnt tend to be completed half-heartedly. Failures are often enough smoothed out in retrospect to render outwardly flawless accounts of ‘best practices’, which, however, emerged through repeated trial and error.

Staff are sometimes also reluctant to share knowledge, because they regard it as their main capital, when moving from one OCOG to the next.

You often get this attitude: “I’ll take as much information as I can from the Games and I’ll be very reluctant to give a lot of my ‘This is what went wrong. This is what went right,’ because that’s how people in the event world stay employed” (interview with consulting expert).

So there remains information that escapes the comprehensive attempt at documenting and bringing it back into the fold. The IOC might have enhanced its ability to mobilize information in an ordered fashion, but there is information that overflows or bypasses the mandated circuits and connects into other networks. This can be described as placing information beyond reach – unable for the IOC to be mastered and brought back into its reach (Allen 2003, 130ff). Topological multiplicities thus limit what the IOC can see and what it can act upon at a distance. It often does not get to know what it wants to know and has only a partial view of what has been happening in the host cities.

<==== *end overflow*

III) Recirculation and acting at a distance

We have seen that the IOC has been able to gather information from the OCOGs and combine it into new forms. Though this process is not without overflows and some information escapes or cannot be combined into knowledge, it does work well enough. The final piece in the mosaic of establishing an oligopticon then is the recirculation of this knowledge: ‘Whenever a locus wishes to act on another locus, it has to go through some medium, transporting something all the way; to go on acting, it has to maintain some sort of more or less durable connection’ (Latour 2005, 220). For the IOC, Technical Manuals and other abstractions such as templates, figures and models were intended to act as what Latour (1993, 79-82, 2005, 40) describes as intermediaries: mobile material delegates that transport meaning without transforming it from site to site and are able to extend the spatial reach of the IOC through enrolling others in its interest. The material, i.e. electronic or printed, form fashions these abstractions with a durability that cannot be rivaled by humans. People come and go in the Olympic Games, given the temporary nature of the event, and even those who stick around for several editions change their opinions or might work with another organization, taking their knowledge with them.

This severe knowledge atrophy is not untypical for projects, which tend to be characterized by amnesia and ephemeral connections based on personal ties (Grabher 2004). Because of this knowledge atrophy from one edition of the Games to the other, the IOC is in a rather privileged position for recirculating knowledge. At the time of the formation of an OCOG, seven years before the event, there is

hardly any expertise at all in the planning processes to deliver the event and achieve the requirements stipulated in the host city contract. Due to the itinerant nature of the Olympic Games, almost all of the staff of an OCOG have never organized the Olympic Games before and have, in the words of an interviewee, ‘hardly any clue of how to achieve the requirements from the host city contract’ (interview with Sochi OCOG staff). The knowledge transfer provided by the IOC free of charge therefore falls on fertile ground, because it provides some templates, figures and guidelines to orient and inform the planning.

Enrollment of OCOGs happens through the circulation of a number of different intermediaries. A central one is the Technical Manual. Interview partners in the OCOGs reported that this was the single most important document for them to structure their work and that it provided the basic orientation during the first week at work and functioned as a reference to go back to whenever they faced obstacles. In most offices the Technical Manual was clearly visible, often on the desk, when I conducted interviews.

It’s like a bible. It would be hard to imagine work without the document. It’s important to make sure that what you are doing is in correlation with this manual. But it is also important when you work with colleagues: I show them what is written in the manual. It helps in discussions: “No, we do this and not this, because it is written here. Not something else” (interview with Sochi OCOG staff).

The formatting effect of the Technical Manual as a quasi-standard is patent in this statement. It is similar to that of standards, which act as objects of knowledge to govern and align behavior, and make it transparent as well as intelligible to others (cf. Higgins and Larner 2010). Several interviewees remarked that the printed paper

form of the manual made it easy to share with colleagues, but also fashioned it with particular authority that could not be disputed. In the Sochi OCOG, the Technical Manuals had been translated into Russian to share some of their contents with stakeholders and contractors and inform them about requirements and past best practices. After the first few weeks at work, new hires were grilled on the contents of the Technical Manual for their area in formal tests that had to be retaken if failed. Embedded in these organizational routines, the Technical Manuals performed the work of further enrolling elements in the network and aligning them, allowing to act at a distance.

Technical Manuals as well as several thousands of related documents from previous OCOGs are hosted on the IOC extranet, a document management and sharing platform that facilitates circulation. Documents posted on the extranet provide crucial information and templates for planning processes in an OCOG and have been reviewed by the IOC. The Building Knowledge Capabilities approach, in combination with the IOC extranet, allowed to significantly speed up the circulation of documents, which was one central aim of the IOC. Whereas earlier, an OCOG would have to wait until the end of the previous Games to receive the pertinent documentation and thus would already be more than three years into its planning phase, Building Knowledge Capabilities guarantees that current information is available on a continuous basis. This allows formatting the setup of an OCOG and orienting its planning already during the formative stage at the very beginning, when many key strategic decisions need to be made and trajectories need to be plotted that are difficult to revise later on.

In addition to documents, it is also people who circulate and spread knowledge. The mobility of professionals has been documented as an important factor in knowledge transmission in other contexts (e.g. Faulconbridge 2006; Jones 2007). In the case of the organization of the Olympic Games it is the IOC workshops that act as an important hub for face-to-face knowledge circulation. These workshops are conducted by IOC-approved experts, who have operational experience with multiple previous Games, and are hosted in the OCOGs. The first workshop typically takes place soon after the establishment of a particular functional area in an OCOG to provide a first orientation on the most important issues, drawing on knowledge from previous Games, and ‘bring people up to speed’ (workshop statement of IOC administration staff). A second one often follows two or three years later

to now educate a bigger audience, including our clients. So we bring everybody together at the same table ... let's get people from outside – from the government, from contractors, from service providers, from local authorities (workshop statement of IOC administration staff).

Similar to the circulation of Technical Manuals and ancillary documentation, workshops aim to enroll OCOG staff from the very beginning and then spin out to extend the network beyond the OCOG, aligning other relevant actors with the interests of the IOC.

<==== *begin overflow*

At the same time, limiting itself to the dissemination of knowledge, the IOC cannot meet the strong demand of OCOGs for developing solutions and operational

expertise. Hiring consulting experts on a temporary basis or permanent staff members with previous Games experience is therefore common practice among OCOGs. This, however, creates knowledge flows that bypass the oligopticon, curtailing the ability of the IOC to govern at a distance. In particular, it obfuscates what counts as the current and valid IOC-sanctioned knowledge and what is perhaps outdated or consultants' interpretation. Sometimes OCOG staff receive information from consultants that conflicts with knowledge that the IOC circulates, creating considerable confusion. A consulting expert recounts an example:

There is a guy who works in functional area A here and who has done several Games and he just said at a recent meeting: "Ah, but we have to keep the IOC's client pyramid in mind." And all of a sudden people here started to think that there was a hierarchy of clients with the IOC and had this new concept in mind, whereas in fact this is complete nonsense (interview with consulting expert).

Due to the particularly high demand for guidance early on, OCOGs often spend significant sums on external consultancy expertise. Because this knowledge does not pass through the obligatory passage point, the IOC's ability to coordinate action in these circumstances is limited and in effect it sometimes finds OCOGs heading off in an unexpected direction, following consultants' advice.

A similar effect can be observed with personal networks that also characterize projects (Grabher 2004) as well as global professional service firms (Faulconbridge 2006). These networks outlast one edition of the Olympic Games, conserving latent ties through which to access knowledge to be applied in the next. The small group of so-called Olympic gypsies – people who work in several editions of the Olympic Games – often maintain close contact, either face-to-face (if working in

the same location) or through facebook, e-mail and instant messaging. Instead of referring to the intermediaries circulated by the IOC, Olympic gypsies draw on their own stock of documents, accumulated over successive Games, or might simply facebook a former colleague when they need help. This is a form of association that extends across space and time: information might be mobilized from a colleague working on the concurrent Commonwealth Games in New Delhi as well as from someone who delivered Beijing 2008 several years ago. Olympic gypsies will typically have worked in the same Organizing Committee at some point in the past, which allowed them to develop personal trust, and then maintained loose ties. These thus fall between Grabher's (2004) ideal types of connectivity, as loose virtual connections, and sociality, as ephemeral but intense face-to-face contact. These ties short-circuit the ordered circulation through the obligatory passage point, as it were, cutting the IOC out of the loop through accessing knowledge via a rival network with more intense ties.

Networks can thus become fluid at times, when elements leave them, do not pass through the obligatory passage points and become enrolled in other networks. This does not mean that action stops or fails. It is still accomplished, though not in the way that the oligopticon has formatted it and not in a way that the oligopticon could see or control it. 'In a fluid ... there is no "obligatory point of passage"; no place past which everything else has to file; no panopticon; no centre of translation; which means that *every* individual element may be superfluous' (Mol and Law 1994, 661). An Olympic gypsy might not need a Technical Manual, it becomes superfluous, and the area of preparation for the Olympic Games that it is intended to format might be organized in a different way, but it is still going to be organized.

<==== *end overflow*

<==== *begin overflow*

However, topological multiplicities not only affect the paths of circulation of intermediaries, as above, but also their very status as intermediaries. The abstraction processes that create them also veil the contingency of intermediaries.

OCOGs get templates, presentations, figures from previous Games, but they don't know the methodology. They see the end result, but don't know the way how the previous OCOGs got there. Let's take the example of buses. If Sydney had 400, Beijing wanted to know: How many did Sydney have? But that's not important. What is important is: What is the formula? How did they figure out how they got to the 400? (interview with consulting expert)

Shutting out this contingency often makes it difficult to see certain results as the outcome of specific contexts. Because the constitutive processes behind the black-boxed intermediaries are opaque, in particular for new OCOGs, OCOG staff initially tend to cling to previous procedures and templates to the letter without having a full understanding of their actual purpose.

People are tempted to copy and paste a lot and just shuffle paper around. They take processes too literally. ... But they forget that it needs to be operational as well. There is over-engineering in the detail, instead of understanding the big picture (interview with consulting expert).

As a consequence, when confronted with unforeseen obstacles that necessitate a divergence from previous procedures, staff struggle to introduce the necessary adjustments. Although an intermediary is supposed to transport meaning without

transformation, when it does fulfill this function it also constrains the emergence of useful action at the same time – as in the quote above: the uniformity of the network is unable to cope with the multiplicity of reality.

After a while, the IOC realized this danger and started to caution against taking documents too literally, warning that ‘we are not spreading the gospel’ (interview with IOC administration staff) and that knowledge should be adapted to the specific local requirements. It encourages OCOGs to formulate their needs ‘by asking questions and make them try and think about different solutions rather than only one’ (interview with IOC administration staff). This, of course, is somewhat ironic, given the IOC’s efforts to format the preparation for the Olympic Games at a distance. However, it can be interpreted as a recognition of the inflexibility of networks, encouraging precisely the kind of multiplicity that Law and Mol write about (Law and Mol 2001; Mol and Law 1994). In other words, this is the dilemma of ‘knowledge as an object’ versus ‘knowing in practice’ (cf. Amin and Cohendet 2004, 8; Faulconbridge 2006; Ibert 2007). Knowledge as an object considers reality as knowable a priori and knowledge as something that can be circulated, stored and exchanged. Knowing in practice, by contrast, insists that ‘knowing reveals and constitutes itself in knowledgeable action and purposeful intervention (Ibert 2007, 105) – something the IOC as oligopticon has been unable to create from a distance. OCOGs do not get to the point where they can develop such forms of knowing in practice until just before the Olympic Games.

Really appreciating and understanding things in LOCOG has probably happened over the last year [2010], when we went through the adolescent teenage years of perhaps throwing toys out of the pram, maybe too often challenging things too

regularly. The relationship is very interesting, because at the outset the OCOG is very compliant and respects all the wishes of the IOC, but then every time when realities strike, budgets hit and so on, then by necessity the OCOG has to think outside the box. ... In some ways, at Games time you almost think at times that the OCOG is the senior partner at that stage, because they've done all the test events, they know things, they know almost better in some regards than the IOC (interview with London OCOG staff).

At this point before the Olympic Games the OCOG itself has evolved a situated practice of knowing that allows it to emancipate itself from the knowledge as object that the IOC is circulating. This turns intermediaries into mediators, which transform and translate the meaning they are supposed to carry, sparking multiplicities. However, as Latour (2005, 202) remarks: 'if any of the intermediaries mutates into a mediator, then the whole setup, no matter how solemn or controlled, may become unpredictable.' This is precisely what happens as the Olympic Games get closer: as the OCOG becomes increasingly independent from the IOC, the power of the IOC to govern at a distance is more and more constrained. Although it remains in contractual control, action is no longer coordinated by the IOC to the same degree as before, as other ways to accomplish actions are found and elements slip out of the network. For the IOC, this means that it will switch more to collecting information, combining it and then re-circulating it to the next OCOG in time, where the process starts over again.

<==== *end overflow*

Reflection and conclusion

The Olympic Games are an emblematic case for the kind of distributed, ephemeral organizing that is becoming more and more common in our late modern world. It involves the coordination of economic action across distance between sites and the establishment of a mediated form of power that associates people and things and brings them together in network arrangements. The IOC attempts to coordinate the preparation for the Olympic Games through circulating knowledge and thus aligning and formatting the actions in the network. It does so through a three-step process of rendering information mobile, casting it into stable material form by combining and processing information and then recirculating knowledge with the help of intermediaries to the organizing committees around the globe. The role of material objects – plans, manuals, maps – should be highlighted here: they allow temporarily stabilizing a network to create power effects and draw the far-off into close reach. The networks from which power emerges are thus more than purely social, but rather socio-material.

These networks, however, are often precarious. They have holes and may start to fray at the edges; elements are enrolled into other networks and circulation might not follow the prescribed conduits. This is what the concept of topological multiplicities encapsulates: despite the elaborate apparatus for capturing and circulating knowledge that the IOC has developed, some knowledge continues to escape being brought back home, but rather creates separate knowledge flows that bypass the IOC. This limits the possibilities of enrolment, as alternative knowledge sources exist to fill knowledge needs and shape action and, as a consequence,

enrolment often remains partial and selective. Conceived as intermediaries – faithful transmitters of meaning –, objects often turn into mediators that produce new meaning, when knowledge is transferred across space and time. Thus, the very process that enables governing at a distance – the abstraction of knowledge from its contexts and the conversion into material form to enroll others – is at the same time one of its most significant limitations in preventing it from adjusting to new contexts. Stabilization and de-stabilization are thus two sides of the same coin: each attempt at stabilizing a network ‘is its own inescapable source of the threat of overflows’ (Çalışkan and Callon 2010, 8).

Becoming more attentive to the topological multiplicities of power has important implications for economic geography. Above all, it allows foregrounding the mutability of networks, thus acknowledging that they are precarious and that what is outside them shapes what is inside them. This challenges the focus on network stability that can be found in most of economic geography. If economic geography focuses on power as an associational, mediated effect of relations, it misses much of the dynamic that may be outside stable ties but at the same time inseparable from them. It is this dynamic that helps projects adapt to new contexts and unforeseen circumstances, developing more fluid, situation-specific and provisional ways of knowledgeable acting. As such, the notion of topological multiplicities offers a handle for grappling with the intricacies of ephemeral, distributed organizing.

Mapping, as this paper has done, these multiplicities through attending to the transformations of the existing network does not imply that networks are always fluid. Clearly, affecting action at a distance is often achieved, if not always in exactly the intended way. Rather an attention to topological multiplicities gives us a

more acute sense of what power can achieve, where its limits are, where and how it is subverted and transformed, and that the outside of networks is constitutive of the inside. It would be the task of economic geographers, then, to chart where and why networks are stable and able to bridge distance, and where they become fluid and the spatial reach of power is transformed as well as what alternative action this results in. After all, as Deleuze and Guattari (1987, 239) remind us, ‘power centers are defined much more by what escapes them or by their impotence than by their zone of power’.

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ⁱ The focus on the IOC and the OCOGs covers the two central organizations in charge of coordinating the planning activities for the Olympic Games. Interviews lasted between 35 minutes and 2 hours 10 minutes, with an average length of 57 minutes, and were recorded and transcribed. Participant observation took place at

- the official observer program during the Olympic Games in Vancouver in February 2010, which was designed to give staff from the Sochi OCOG *in situ* insights into processes at Games time,

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- the debrief of the Vancouver Olympic Games in June 2010, which was a three-day event that provided reflections on lessons learnt from staff of the Vancouver OCOG for staff of the Sochi OCOG,
 - two two-day workshops for knowledge transfer in March and July 2011, in which consulting experts with previous Games experience were brought in to provide knowledge to OCOG staff.

Material from the field research was supplemented with documents from the main knowledge exchange platform of the Olympic Movement, the IOC Extranet, which serves as a digital document repository and reference library. Interview transcripts, field notes from participant observation as well as some key documents were coded using software for qualitative data analysis. Verbatim quotes indicate the organizational affiliation of the interviewee, but do not provide additional details so as to maintain anonymity. All opinions expressed are personal and do not represent the official position of the respective organizations.

ⁱⁱ See, for example, the London 2012 host city contract, which is available under the Freedom of Information Act.